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progress of science and the advance in public welfare which may be expected from the most rational development of these scientific agencies. The division bespeaks the cooperation in this study of all those who are interested in this aspect of the advancement of science.

SUMMER MEETING OF THE AMERICAN INSTITUTE OF CHEMICAL ENGINEERS

THE summer meeting of the institute will be held in Canada. The date has been fixed tentatively as June 21-26. Plans as worked out at present include a meeting of two days, Monday and Tuesday, at Montreal, for the business sessions, reading of papers and possibly one or two excursions to chemical industries in Montreal.

The program of papers to be presented is being prepared and the secretary desires information as to papers being prepared for presentation at this meeting. Members are urged to present to the society as many papers as possible in order to make the meeting profitable and the *Transactions* valuable. Papers on any phase of chemical engineering work would be welcome. A special endeavor is being made to secure papers on electrolytic industries and papers on this subject are especially desired.

Wednesday will be spent at Ottawa visiting the copper and nickel refinery of the British-American Nickel Corporation, also inspection of the government buildings and the laboratories of the Bureau of Mines.

Thursday and Friday will be spent at Shawinigan Falls seeing the power development and the electrolytic industries located in this vicinity.

Saturday will be spent at LaTuque where we have secured permission from the Brown Company for a visit to the very large sulphate pulp mill where the explosion process described by Hugh K. Moore at our Savannah meeting is in operation. From this point a trip is being planned to the very large artificial lake which has been made at La Loutre. This includes a 50 mile boat trip, stopping at a fishing camp on the lake where there will be opportunity for motor boating and fishing. After a stop of a day or two in this very picturesque

and wild part of Canada, the return trip will be made to Quebec.

J. C. OLSEN,
Secretary

THE AMERICAN PHYSICAL SOCIETY

THE one hundred and third regular meeting of the American Physical Society will be held in Washington, at the Bureau of Standards, on Friday and Saturday, April 23 and 24. The first session will begin at 10 o'clock on Friday morning. The program contains the titles of forty-six papers.

The other meetings for the calendar year will be as follows: The Thanksgiving meeting, on November 27, will be held at Case School of Applied Science in Cleveland, instead of in Chicago. The annual meeting, beginning on December 28, will be held in Chicago, this being the occasion of the special Quadrennial Meeting of the American Association for the Advancement of Science and the Affiliated Societies. The October meeting will be omitted for the year 1920.

The Pacific Coast Section will hold a meeting at the University of Washington, in Seattle, at the time of the meeting of the Pacific Division, A. A. A. S., June 17-19, 1920. Correspondence relating to this meeting should be addressed to the Secretary of the Pacific Coast Section, Professor E. P. Lewis, University of California, Berkeley, California.

DAYTON C. MILLER,
Secretary

CASE SCHOOL OF APPLIED SCIENCE

SCIENTIFIC NOTES AND NEWS

THE National Academy of Sciences will hold its annual meeting at the U. S. National Museum, Washington, D. C., April 26, 27 and 28. The William Ellery Hale Lecture will be given on April 26 by Dr. Harlow Shapley, of the Mount Wilson Solar Observatory, and Dr. Heber D. Curtis, of the Lick Observatory, on "The Scale of the Universe."

THE American Philosophical Society is holding its general meeting in Philadelphia on April 22, 23 and 24. On the evening of the

twenty-third, Professor R. W. Wood, of the Johns Hopkins University, lectures on "Invisible Light in War and Peace."

DR. JAMES R. ANGELL, professor of psychology in the University of Chicago and dean of the university faculties, this year chairman of the National Research Council, has been elected president of the Carnegie Corporation, New York.

PROFESSOR THEODORE W. RICHARDS and Professor George D. Birkhoff, of Harvard University, have been elected members of the Danish Academy of Sciences.

THE Royal Irish Academy has elected as honorary members Professor George Ellery Hale, Professor A. E. H. Love, Sir Ernest Rutherford and M. Henri Louis le Châtelier.

THE founder's medal of the Royal Geographical Society has been awarded to Mr. H. St. John B. Philby, for his two journeys in south-central Arabia, 1917 and 1918; the Patron's medal to Professor Jovan Cvijic, rector of the University of Belgrade, for studies of the geography of the Balkan Peninsula; the Victoria medal to Lieutenant-Colonel H. S. L. Winterbotham, for his development of scientific methods of artillery survey and the production of maps of inaccessible areas.

OFFICERS of the Malacological Society of London for 1920 were elected at the annual meeting on February 13 as follows: *President*: G. K. Gude; *Vice-Presidents*: H. O. N. Shaw, T. Iredale, J. R. le B. Tomlin, and A. S. Kennard; *Treasurer*: R. Bullen Newton; *Editors*: B. B. Woodward; *Secretary*: A. E. Salisbury.

A CORRESPONDENT writes: "The many friends of Professor Ludwig von Graff, formerly head of the Zoological Institute of the University at Graz, Austria, and well known for his work upon the Plathelminths, will be sorry to hear that he is suffering with arteriosclerosis, and that since the beginning of the war he has not been able to do any mental work. Owing to the great depreciation of Austrian money, he and his family are in straitened circumstances."

WILLIAM T. SEDGWICK, professor of biology at the Massachusetts Institute of Technology, left the United States this week for England, where he will serve as the institute's first exchange professor to the universities of Leeds and Cambridge.

DR. EDWARD P. HYDE, director of the Nela Research Laboratory, Cleveland, sailed for Europe on April 13, in connection with business for the International Commission on Illumination, of which he is the vice-president. He expects to return to this country in July.

DR. J. O. HALVERSON, associate in the department of nutrition of the Ohio Agricultural Experiment Station, the past three years, has been appointed to take charge of similar work in the Agricultural Experiment Station at Raleigh, N. C.

MR. R. A. MCGINTY, associate professor of horticulture in the Colorado Agricultural College and Experiment Station, has resigned to enter the employment of a canning company at Canon City, Colorado.

MR. R. H. BULLARD, instructor in chemistry at Hobart College, has accepted a position in the research department of the Roessler & Haslach Chemical Co., Perth Amboy, N. J.

DR. PIER ANDREA SACCARDO, the distinguished mycologist and professor emeritus of the Royal University of Padua, Italy, died on February 12, in the seventy-fourth year of his age. Professor Saccardo was a member of numerous academies and societies both Italian and foreign, and is known to all pathologists and mycologists by his great *Sylloge Fungorum*.

MR. J. S. MACARTHUR, the English industrial chemist, known for his part in the discovery of the cyanide process for the extraction of gold and other metals, and for the work in chemistry and mining, died on March 16.

THE Dartmouth Scientific Association organized in February, 1870, observed its fiftieth anniversary on the 18th inst. by the presentation of an address on "The Founders" by the only living member of the original seven, Dean-Emeritus Charles F. Emerson. Professor Emerson has been an active member

from its organization, as he has been connected with the college as student and teacher for fifty-five years, and has seen the College expand from 176 students to 1738. So far as reports from colleges and universities in America could be secured, this Scientific Association has maintained the longest continued existence without a lapse of meetings, twice a month, except vacations. The association is now in a most prosperous condition with about 70 members.

NORTHWESTERN UNIVERSITY department of chemistry has received a grant of \$3,500 from the Interdepartmental Social Hygiene Fund of the United States Government. This fund is for the purpose of supporting research leading to the development of new metallo-organic compounds which may prove of therapeutic value in the treatment of syphilis of the central nervous system. A plan of cooperation has been worked out between the Universities of Wisconsin, Minnesota, Illinois, and Northwestern whereby all pharmacological work will be done by the first-named institution and the synthesis of new compounds by Minnesota, Illinois and Northwestern in cooperation.

A SUM of money has been raised by the olive growers and the canning industry for an intensive study of botulism in California. The investigation will be conducted in the laboratories of the Stanford University Medical School and the George William Hooper Foundation for Medical Research of the University of California and has the cooperation of the U. S. Health Service and the California State Board of Health. The investigation will include a careful study of the distribution of the *Bacillus botulinus* in nature, of the ways in which food materials may become infected and of the steps necessary to destroy the organism when it has infected raw food materials. A staff of specially trained workers has been engaged and it is expected that the work will require at least two years.

CONCURRENTLY with the introduction of a bill into the United States Senate by Senator Johnson providing for the establishment and maintenance by the United States Forest Serv-

ice of a Forest Experiment Station in California in cooperation with the University of California, the Division of Forestry at the State University has expressed the opinion that such an experiment station "would be of great importance to every one interested in California forests." It was stated that the Forest Products Laboratory established about ten years ago at the University of Wisconsin has not only developed into a large and important institution doing work known throughout the country, but that it is now the leading institution of its kind in the world. "There is no reason why the Forest Experiment Station proposed for California to enable scientific investigation of forestry problems should not also become the leader in its field." An initial appropriation of \$25,000 is suggested in Senator Johnson's bill, it was stated. The work of the staff of the proposed station would be carried on in cooperation with the faculty of the Division of Forestry of the University of California.

A BRITISH Association of Research for the cocoa, chocolate, sugar, confectionery, and jam trades has been formed in accordance with the government scheme for the encouragement of industrial research. The association will establish and maintain laboratories and conduct experiments, and powers are also taken to encourage the technical education of persons engaged or likely to be engaged in the allied trades. The government will contribute, with certain limits, out of the funds of the Imperial Trust for the encouragement of scientific and industrial research a sum equal to that subscribed by the members themselves for five years.

AMONG recent appropriations made in Cuba there is one providing \$225,000 to remodel the Hospital Las Animas of Havana and to erect a monument to Dr. Carlos Finlay at the entrance of the hospital.

THE Rockefeller Institute for Medical Research has received a letter from Surgeon-General William C. Braisted, U. S. Navy, testifying to his appreciation of the valuable aid rendered by the institute in connection

with the War Demonstration Hospital, New York City. The assistance was not limited to the active period of the war, but continued after the signing of the armistice.

THE eighteenth annual meeting of the North Carolina Academy of Science will be held on April 30 and May 1, at the N. C. State College, West Raleigh. Professors A. H. Patterson, physicist, and R. W. Leiby, entomologist, are president and secretary-treasurer, respectively.

UNIVERSITY AND EDUCATIONAL NEWS

THE family of Henry Phipps have given \$500,000 to the Henry Phipps Institute of the University of Pennsylvania for the study of tuberculosis.

MR. JAMES F. BRADY and Mr. Vincent Astor have subscribed \$250,000 to the two million dollar endowment fund of the New York Post Graduate Medical School as soon as the first million dollars has been raised.

DR. ALBERT W. SMITH, dean of the college of mechanical engineering of Cornell University, has been appointed acting president of the university during President Schurman's leave of absence. President Schurman will resume office on June 1, retiring on June 23.

MR. ALBERT E. WHITE, formerly head of the metallurgical branch, technical staff of the Ordnance Department, has returned to his former position as professor of chemical engineering at the University of Michigan, Ann Arbor, Mich.

DR. WILLIAM LEONIDAS BURLISON, professor of crop production of the University of Illinois, has been appointed head of the department of agronomy, to fill the vacancy caused by the death of Dr. Cyril G. Hopkins.

DISCUSSION AND CORRESPONDENCE

CEREBELLAR LOCALIZATION BY THE APPLICATION OF STRYCHNINE

THERE exists, at the present time, a considerable diversity of opinion with respect to the localization of functions in the cerebellum. The conception of cerebellar local-

ization is based on the studies of Elliot Smith, Bolk, van Rynberk, André-Thomas and Bárány. Nevertheless, in a recent study of war wounds involving the cerebellum, Gordon Holmes was unable to find definite evidence in support of the localization doctrine.

The present writer is conducting a series of experiments in which an effort is being made to solve the problem by the application of strychnine to the cerebellar cortex. The experiments are being performed on cats anesthetized with chloroform and ether. Tracheotomy is carried out and both carotid arteries are ligated. The left cerebellar hemisphere is then exposed. A 1 per cent. solution of strychnine nitrate containing methylene blue is applied to the surface with a small pledget of absorbent cotton. Any excess is carefully wiped off and spreading to the medulla oblongata is precluded by the use of thick vaseline. The area covered by the strychnine solution apparently embraces the "crus secundum" and to some extent the "crus primum" of Bolk. The crus secundum, according to van Rynberk, is concerned with the ipsilateral hind limb, whilst the crus primum is concerned with the ipsilateral forelimb.

After applying the strychnine the animal is laid on its back and the narcosis is allowed to subside slightly. Within about 5 minutes it is found that flexion applied to the ipsilateral (left) hind leg at ankle, knee and hip evokes a succession of regular tremors which may persist for an indefinite period. Mechanical stimulation or faradization of the pads of the foot yields a like result, which is also evokable by induction of the knee-jerk. Frequently the leg is carried by the rhythmic tremors into a condition of sustained extension, which recalls vividly the condition met with in "decerebrate rigidity."

Application of the above-mentioned modes of stimulation to the contralateral (right) hind leg is usually without result but at times phenomena of similar kind are induced. These, however, are weaker and of shorter duration than in the ipsilateral limb. It ap-